REMARKS

This paper is presented in response to the Examiner's Office Action mailed December 3, 2009, and is being timely filed within the three-month statutory period of time set for response by the Examiner. No extension of time is required.

REGARDING THE CLAIM AMENDMENTS:

Claims 1, 9, 17 and 18 have been amended to incorporate the recitation that the saturation magnetization is 5.0 kG or more. This recitation has previously been included in claims 7, 12 and 13, both claims of which have been appropriately changed as well.

REGARDING THE CLAIM REJECTIONS:

In the Office Action, the Examiner rejected claims 1-2, 4-6, 7-9 and 11-14 under 35 USC 103(a) as being obvious over the Yamamoto et al. reference stating the Yamamoto et al. reference teaches sintered magnets and powders consisting of the compound $Ba_{1.092}\ Zn_{1.725}Fe^{2+}_{0.410}\ Fe^{3+}_{15.848}O_{27}$ based on the amount of 4.0 wt% of BaO (Table 2), in which the compound doesn't teach the amounts claimed. The Examiner has taken the position that the compound is a result effective variable, and deemed that it would have been obvious to one of ordinary skill in the art at the time of the invention to have determined the optimum value of the results effective variable to be as presently claimed, through routine experimentation, in view of the Yamamoto et al. teachings. Regarding claims 7-8 and 11-13, the Examiner stated that, given the teachings of Yamamoto et al., the magnetic powder intrinsically possesses saturation

magnetization as presently claimed while the magnet intrinsically possesses saturation magnetization, squareness, and residual magnetic flux density as claimed.

Claims 7-8, 11, and 13 were also rejected under 35 USC 103(a) as being unpatentable over Yamamoto et al in view of the US Patent to Toyota, the Examiner relying on the Toyota patent for a teaching of a W-type ferrite magnet having a saturation magnetization of 5.0 kG, 5.1 kG, and a residual magnetic flux density of 4.8 kG.

Claim 12 was rejected under 35 USC 103(a) as being unpatentable over Yamamoto et al. in view of the US Patent to Taguchi et al. (it appears that the rejection also should be based on the Toyota patent as well, as the Examiner discusses that patent here too), relying on Taguchi et al. for a teaching of squareness of 80%.

Claims 15-17 were rejected under 35 USC 103(a) as being obvious over Yamamoto et al. in view of Kijima et al. (JP 02-180004) relying on Kijima et al for a teaching of a ferrite magnetic powder in which M consists of Ba, Sr, and Pb, such that when combined with Yamamoto et al's teaching, the element A being Sr and/or Ba would be viewed as obvious.

Claims 15-17 were rejected under 35 USC 103(a) as being obvious over Yamamoto et al. in view of Kijima et al. (JP 02-180004) relying on Kijima et al for a teaching of a ferrite magnetic powder in which M consists of Ba, Sr, and Pb, such that when combined with Yamamoto et al's teaching, the element A being Sr and/or Ba would be viewed as obvious.

Claim 18 was rejected under 35 USC 103(a) as being obvious over Yamamoto et al. in view of Kijima et al. (JP 02-180004), and further in view of Taguchi et al, relying on the latter for a teaching of a hexagonal ferrite magnetic powder used in a magnetic layer over a substrate.

Claims 19-20 were rejected under 35 USC 103(a) as being obvious over Yamamoto et al. in view of Kijima et al. (JP 02-180004), and further in view of Toyota, relying on the latter for a teaching of a residual magnetic density of 4.8 kG and a saturation magnetization of 5.2 kG, the Examiner stating that it would have been obvious to optimize Toyota's magnetization to 5.2 kG in the recording medium.

Claims 1-9 and 11-17 were rejected under 35 USC 103(a) as being obvious over Kijima et al. (JP 02-180004) in view of Yamamoto et al for the reasons set out on pages 7-9 of the Office Action.

Claims 7-8, 11, and 13 were rejected under 35 USC 103(a) as being obvious over Kijima et al. (JP 02-180004) in view of Yamamoto et al, and in further view of Toyota, for the reasons set out on pages 9-10 of the Office Action.

Claim 12 was rejected under 35 USC 103(a) as being obvious over Kijima et al. (JP 02-180004) in view of Yamamoto et al, in view of Toyota, and in further view of Taguchi et al., for the reasons set out on pages 10-11 of the Office Action.

Claims 18 was rejected under 35 USC 103(a) as being obvious over Kijima et al. (JP 02-180004) in view of Yamamoto et al, and in further view of Taguchi et al., for the reasons set out on page 11 of the Office Action.

Claims 19-20 were rejected under 35 USC 103(a) as being obvious over Kijima et al. (JP 02-180004) in view of Yamamoto et al, in view of Taguchi et al, and in further view of Toyota, for the reasons set out on page 12 of the Office Action.

Regarding applicants' arguments previously presented, the Examiner stated that such arguments were moot in view of the amendments made to the claims regarding the range of "x", and that as a result of those claim changes new art had been applied.

Applicants have considered all of the Examiner's rejections, but believe that these rejections are without merit and, for the following reasons, urge their withdrawal and respectfully solicit their allowance.

First, regarding Yamamoto (Magnetic Properties of Ba-Zn-System W-Type Hexagonal Ferrite Magnets), the reference describes a compound represented by the formula:

$Ba_{1.092}\ Zn_{1.725}Fe^{2+}_{0.410}\ Fe^{3+}_{15.848}O_{27}$.

However, as shown in the following table, the Fe^{2+} amount taught by Yamamoto et al does not overlap the Fe^{2+} range of the present invention. The M amount taught by Yamamoto et al. also does not overlap the M range of the present invention.

		Fe^{2+}	M
Composition of Yamamoto		**0.410**	**1.725**
Claim 1 of the present invention	x = 0.3、 a = 2.2	**1.54**	0.66
	x = 0.3、 a = 1.5	**1.05**	0.45
	x = 0.7、 a = 1.5	**0.45**	1.05
	x = 0.7、 a = 2.2	**0.66**	1.54

In addition, Yamamoto fails to possess the magnetic properties defined by the amended claims 1, 9 and 17 (i.e., saturation magnetization (4πIs) of 5.0 kG or more).

Regarding the Kijima reference (JP2-180004), and referring to the following Table, claim 1 of the present invention does not overlap the ranges proposed by Kijima. More specifically, Fe^{2+} ranges from 1.9 to 2.05 in Kijima whereas Fe^{2+} ranges from 0.45 to 1.54 in the present invention.

		Fe^{2+}	M
Kijima (JP2-180004)		1.9 ~ 2.05	the zinc oxide and/or the compound that becomes zinc oxide when heated is added in such a quantity that the Zn content becomes 1.0 to 10 mol% of Fe^{2+}
Claim 1 of the present invention	x = 0.3, a = 2.2	**1.54**	0.66
	x = 0.3, a = 1.5	**1.05**	0.45
	x = 0.7, a = 1.5	**0.45**	1.05
	x = 0.7, a = 2.2	**0.66**	1.54

For the following reasons, however, applicants take issue with the Examiner's position that "it would have been obvious to one of ordinary skill in the art at the time of the invention to reduce the Fe^{2+} range of Kijima to be of 1.54, as claimed, since Yamamoto teaches that the compound is a result effect variable and in order to contribute the stabilization of the W phase of the magnets (pg.758)".

Claim 1 of Kijima defines that "$MeFe^{2+}_{2+x}Fe^{3+}_{16-x}O_{27}$, wherein Me is at least one selected form Ba, Sr, and Pb and x ranges from +0.05 to -0.10".

If the Fe^{2+} amount of Kijima is set at 1.54 (i.e., the upper limit of the Fe^{2+} range of the present invention) according to the Examiner's assumption, the x amount of Kijima must be set at -0.46. If the Fe^{2+} amount of Kijima is set at 0.45 (i.e., the lower limit of the Fe^{2+} range of the present invention), the x amount of Kijima must be set at -1.55. In the latter case, the Fe^{2+} amount of Kijima shall be 17.55, which exceeds the upper limit of the b range of the present invention.

Now referring to the Table 1-b of Kijima, the following examples are listed.

Comparative Example 1 wherein x is set at -0.80,

Comparative Example 2 wherein x is set at -1.20,

Comparative Example 3 wherein x is set at -0.50, and

Comparative Example 4 wherein x is set at -0.40.

However, as shown in Table 2 of Kijima, the magnetic properties of Comparative Examples 1-4 compared with those of Examples 1-6 of Kijima show that Comparative Examples 1-4 have lower magnetic properties than Examples

1-6 in all the items (i.e., residual flux density, coercive force, degree of orientation, and (BH)max).

Therefore, claim 1 of Kijima defines that

"$MeFe^{2+}_{2+x}Fe^{3+}_{16-x}O_{27}$ wherein Me is at least one selected form Ba, Sr, and Pb and **x ranges from +0.05 to -0.10**". **In other words, Kijima teaches away the Fe^{2+} range of the present invention.**

In addition, the absolute value of the x range of Kijima is 0.15 as defined in claim 1. In contrast, the absolute value of the x range of Kijima shall be 0.51 in the Examiner's assumption. The latter value has more than tripled. That is, the Examiner's assumption requires to extremely broaden the original range and such the assumption is not reasonable.

Next, claim 1 of Kijima defines that "the zinc oxide and/or the compound that becomes zinc oxide when heated is added in such a quantity that the Zn content becomes 1.0 to 10 mol% of Fe^{2+}. In Example 1 of Kijima, the blending amount of Fe_2O_3 was 2950 g and the blending amount of Zn was 10 g. In Example 2 of Kijima, the blending amount of Fe_2O_3 was 2950 g and the blending amount of Zn was 26 g. Thus, Kijima does not degrease the amount of Fe_2O_3 when the amount of Zn is increased. For that reason, with the increase of the Zn amount, the sum of Fe^{2+} and Zn becomes too large for Fe^{2+} site and this probably leads to the decrease in magnetic properties. Although we reviewed all the contents of Kijima, Kijima does not suggest to have the Fe^{2+} be reduced with the increase of Zn amount.

In addition, Kijima fails to possess the magnetic properties defined by the amended claims 1, 9 and 17(i.e., saturation magnetization (4πIs) of 5.0 kG or more).

Regarding the combination of teachings of Yamamoto et al. and Kijima, in order to make the composition disclosed by Yamamoto closer to that of the present invention, the Fe^{2+} amount of Yamamoto must be increased. Even if Kijima suggests increasing the Fe^{2+} amount, Kijima and Yamamoto fail to disclose the advantage obtained by reducing the Fe^{2+} amount with the increase of Zn amount.

In addition, Kijima denies the Fe^{2+} range of the present invention, as mentioned above. Thus, applicants urge that it would be difficult for a person of ordinary skill in the art to set the Fe^{2+} amount of Yamamoto at 0.45 to 1.54 as proposed by the present invention.

Regarding the Taguchi (USP 6,258,290) and Toyota (USP 5,866,028) patents and the combination of their teachings under 35 USC 103 as applied to the rejection of claims 12, and 18-20, Table 4 of Taguchi shows that the sintered magnets obtained in Taguchi do not possess the magnetic properties defined by the amended claims 1, 9, 17 and 18 (i.e., possessing a saturation magnetization (4πIs) of 5.0 kG or more).

Although the Examiner states that the magnetic properties obtained in **Toyota** or **Taguchi** will be attainable in the combination of Kijima and Yamamoto and Toyota and/or Taguchi, this logic is not reasonable. Toyota and Taguchi fail to disclose the above-mentioned technical feature of the present invention that

the sum of Fe^{2+} and M stays "a" by reducing the Fe^{2+} amount with the addition of M. Therefore, the combination of Kijima and Yamamoto and Toyota and/or Taguchi does not lead to the present invention.

For all the foregoing reasons, and in view of the amendments presented or referred to in this response, applicants respectfully solicit withdrawal of the rejections applied in the Rejection mailed December 3, 2009, and request an allowance of the claims presently under consideration in this application.

If the Examiner has any questions or requires further information or explanation, he is invited to contact the undersigned at the telephone number provided below.

Respectfully submitted,

Dariush G. Adli
Registration No. 51,386

CHAN LAW GROUP LLP
www.chanlaw.com
1055 West 7th Street, Suite 1880
Los Angeles, California 90017-2544
Tel: 213 225-2604
Fax: 213 622-1154